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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,348	02/18/2004	Ho Lu	JCLA12196-1	4164
23900	7590	11/30/2005	EXAMINER	
J C PATENTS, INC.			CRUZ, MAGDA	
4 VENTURE, SUITE 250			ART UNIT	
IRVINE, CA 92618			PAPER NUMBER	
			2851	

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/782,348

Applicant(s)

LU ET AL.

Examiner

Magda Cruz

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: element 1116 (Figure 12). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37

CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

***Specification***

3. The disclosure is objected to because of the following informalities: there is no description of element 1116 (Figure 12).

Appropriate correction is required.

***Claim Objections***

4. Claim 8 is objected to because of the following informalities: there is insufficient antecedent basis for the limitation "using the film without gradient coating" (line 2).

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 8-10 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakashima et al.

Nakashima et al. (US Patent Number 6,910,773 B2) discloses:

- Regarding claims 1 and 9, a light source (Figure 2, element 1), to provide a parallel light beam; a first color splitter (Figure 2, element 6), to split the parallel light beam into a first primary color beam (i.e. blue beam) and a color mixing beam (i.e. green and red beam), wherein the color mixing beam includes a second primary color beam (i.e. green beam) and a third primary color beam (i.e. red beam); a first both-side telecentric group (Figure 2, element 4, between elements 6 and 8), implemented after the first color splitter (Figure 2, element 6) and on a first light path of the first primary color beam, so as to produce a first light beam (i.e. blue beam); a second both-side telecentric group (Figure 2, element 4, between elements 6 and 7), implemented after the first color splitter (Figure 2, element 6) and on a second light path of the color mixing beam (i.e. green and red beam); a second color splitter (Figure 2, element 7), disposed at a position, so as to split the color mixing beam into a second light beam (i.e. green beam) and a third light beam (i.e. red beam); and a mixing (Figure 2, element 14) and projection unit (Figure 2, element 15), receiving the first light beam (i.e. blue beam), the second light beam (i.e. green beam), and the third light beam (i.e. red beam) to combine and project.
- Regarding claim 2, each of the first and the second both-side telecentric groups (Figure 2, element 4) includes at least one reflection mirror (Figure 2, element 8) to adjust a light path direction.

- Regarding claim 3, the light beams have equal path length (see light path shown in Figure 2).
- Regarding claim 4, three liquid crystal panel set (Figure 2, elements 111, 112 and 113) disposed with respect to the light beams, a projection lens set (Figure 2, element 15), a color-combination prism (Figure 2, element 14) to mix the light beams into a mixed beam and then lead the mixed beam to the projection lens set (Figure 2, element 15), at least one reflection mirror (Figure 2, elements 101, 102 and 103) to lead at least one of the second light beam and the third light beam onto the color-combination prism (Figure 2, element 14).
- Regarding claims 8, 14 and 15, the color splitters (Figure 2, elements 6 and 7) include using the film without gradient coating therein (i.e. dichroic mirror).
- Regarding claim 10, mixing the first light beam (i.e. blue beam), the second light beam (i.e. green beam) and the third light beam (i.e. red beam) includes using a plurality of liquid crystal panels (Figure 2, elements 111, 112 and 113) to produce an image pattern.
- Regarding claim 13, combining the first light beam (i.e. blue beam), the second light beam (i.e. green beam) and the third light beam (i.e. red beam) includes using a color-combination prism (Figure 2, element 14).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5, 7 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al. in view of Lian et al.

Nakashima et al. (US Patent Number 6,910,773 B2) teaches the salient features of the present invention as explained above (see Rejection under §102(e)), except (regarding claims 5, 7) three wire grid polarizers grouping with the three liquid crystal reflection panels, so as to cause the light beams to enter the color-combination prism; (regarding claim 11) mixing the first light beam, the second light beam and the third light beam includes using a plurality of liquid crystal on silicon panels to produce an image pattern; and (regarding claim 12) using a plurality of wire grid polarizers with the LCOS panels to produce the image pattern.

Lian et al. (US Pub. No. 2005/0024591 A1) discloses three wire grid polarizers (Figure 1, elements 40, 41 and 42) grouping with the three liquid crystal reflection panels (Figure 1, elements 30, 31 and 32), so as to cause the light beams to enter the color-combination prism (figure 1, element 60); mixing the first light beam (i.e. blue beam), the second light beam (i.e. green beam) and the third light beam (i.e. red beam) includes using a plurality of liquid crystal on silicon panels (Figure 1, elements 30, 31 and 32) to produce an image pattern; and using a plurality of wire grid polarizers (Figure

1, elements 40, 41 and 42) with the LCOS panels (Figure 1, elements 30, 31 and 32) to produce the image pattern.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the liquid crystal on silicon panels in combination with the wire grid polarizers disclosed by Lian et al. in substitution of the liquid crystal panels from Nakashima et al.'s invention, for the purpose of solving problems of low performance and high cost when using a PBS, prism of unique shapes and peculiar optical elements (Lian et al., page 1, paragraph 0009, lines 2-4).

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al. in view of Lian et al. as applied to claims 5, 7 and 11-12 above, and further in view of Akiyama et al.

Nakashima et al. (US Patent Number 6,910,773 B2) in combination with Lian et al. (US Pub. No. 2005/0024591 A1) teaches the salient features of the present invention as explained above, except three liquid crystal reflection panels parallel to the three surfaces of the color-combination prism.

Akiyama et al. (US 6,633,435 B2) discloses three liquid crystal reflection panels (Figure 1, elements 410R, 410G and 410B) parallel to the three surfaces of the color-combination prism (Figure 1, element 420).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to position the liquid crystal panels from Nakashima et al.'s invention parallel to the three surfaces of the color-combination prism as disclosed by



Akiyama et al. for the purpose of providing increased service efficiency of light and a sharp image (Akiyama et al., column 1, lines 9-10).

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shiue et al. (US Patent Number 6,402,323 B1) discloses a reflective type liquid crystal projection display.

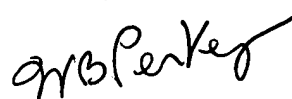
Hansen (US Patent Number 6,666,556 B2) teaches an image projection system with a polarizing beam splitter.

Lu et al. (US Pub. No. 2005/0174541 A1) shows an optical projection system that can receive a red light beam, green light beam and blue light beam.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magda Cruz whose telephone number is (571) 272-2114. The examiner can normally be reached on Monday through Thursday 8:00-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**William Perkey**  
**Primary Examiner**

Magda Cruz  
Patent Examiner

November 20, 2005